The Impact of Joint Venture Formation Strategies on the Market Value of Firms: An
Assessment in the Information Technology Sector

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## ABSTRACT

This paper examines the impact of joint venture formation strategies on the market value of the parent firms in the information technology sector using an event-study perspective. In this study, we found the announcement of joint venture formation -- on average -- leads to significant increase in the market value for the participating parents, and an additional exploratory, *ex-post* calibration indicates the superiority of joint venture formations over other forms of cooperative arrangements. Further, we observed that the magnitude and significance of market valuations vary across different types of joint venture strategies. This finding lends credence to the importance of joint venture strategies and contributes toward the understanding of effective design of joint ventures along a contingency perspective.

Research in strategic management is grounded in the notion that strategy influences corporate performance, as manifest in the literature on corporate diversification (e.g., Rumelt, 1974), merger strategies (e.g., Singh & Montgomery, 1987), organizational structure (e.g., Chandler, 1962), business strategies (Porter, 1980) and strategic planning systems (e.g., Kudla, 1980). In this vein, assessment of the value of forming joint ventures (JVs) for the participating firms is warranted, given that they constitute one important dimension of corporate strategy (e.g., Harrigan, 1985; Contractor & Lorange, 1988).

Joint ventures have received research attention with differing perspectives, but this research stream can be categorized along two dimensions: (a) *the dominant theoretical perspective*, i.e., either strategic behavior perspective or transaction cost perspective; and (b) *the research focus,* i.e., whether the focus is on the *motives* for the formation of joint ventures or on their *effectiveness*. The four types of studies shown in Figure 1 illustrate the major research questions and the underlying theoretical arguments.

(Insert Figure 1 about here)

The first type of studies -- termed as **strategic motives of parents** -- are grounded in the industrial economics/strategic management paradigm, and seek to analyze and explain the strategic motives for joint venture formation based on a firm's capability to offer products or services to compete effectively in its markets. The motives described in these studies can be categorized into market-power enhancement and efficiency enhancement. Market-power enhancement is argued as the principal motive by Fusfeld (1958), Mead (1967), Pate (1969), Boyle (1968), and Pfeffer and Nowak (1976a, 1976b) and efficiency enhancement is focused on by Backman (1965), Berg and Friedman (1977, 1978), Rockwood (1983), and Stuckey (1983). Anchored in the same theoretical perspective, the second type of research -- termed as **effectiveness of joint venture strategies** -- deals with two important

questions: (i) Are joint ventures effective; and (ii) Under what conditions are joint ventures effective? However, there have been few empirical studies falling into this category (notable exceptions are: McConnell and Nantell, 1985; and Harrigan, 1988).

Grounded in the transaction cost perspective (Williamson, 1975), the third type of research studies -- termed as **efficient governance mechanisms** -- seek to explain the motives for forming joint ventures primarily based on the minimization of production and coordination (transaction) costs as compared with those for other kinds of governance structures (e.g., Hennart, 1988; Kogut, 1988a). In other words, this type of studies explore the reasons and the contexts for the superiority of joint ventures over other mechanisms like internal integration and market mechanisms (e.g., contracts). For instance, Kogut (1988a: p. 321) argues that "the critical dimension of a joint venture is its resolution of high levels of uncertainty over the behavior of the contracting parties when the assets of one or both parties are specialized to the transaction and the hazards of joint cooperation are outweighed by the higher production or acquisition costs of 100 percent ownership." Examples of studies in this type include Shan (1986) and Teece, Pisano, and Russo (1987). The fourth type -- termed as **effectiveness of governance mechanisms** -- seeks to examine if firms which choose the modes that best minimize production and coordination costs do indeed have high performance. However, there are no empirical studies in this category.

It is important to consider the two prominent studies belonging to the second category, termed as effectiveness of joint venture strategies. In an important study, McConnell and Nantell (1985) examined 136 joint ventures from a cross-section of industries using the event-study methodology and concluded that joint ventures are, on average, value-creating activities for the parent firms. However, they did *not* further explore the relationship between the differential characteristics of joint ventures and their effects, which is necessary to identify the important relationships

between JV strategies and performance. In contrast to the use of the parent firm as a unit of analysis in the McConnell and Nantell study, Harrigan (1988) focused on the JV as the unit of analysis in an attempt to isolate the differential effects of joint-venture characteristics. However, she found, using cross-sectional data, that characteristics or strategies -- such as partners' and parent-venture relationship traits -- tend to have little impact on joint-venture effectiveness. Thus, she concludes that industry-level traits are more important determinants of effectiveness than joint-venture strategies. Given that several authors have argued that the impacts of joint ventures are dependent upon their characteristics (for instance, Berg, Duncan, and Friedman (1982) have focused on the technological, i.e., knowledge-acquisition aspect), the debate regarding the industry-level traits and joint-venture strategies appears fertile for further research.

Taking these two studies as a point of departure, this study examines the impact of JV formations on the market value of the participating firms, i.e., parents. More precisely, our purpose is to: (a) assess the impact of joint venture formations in the information technology sector on the market value for the participating parents using an 'event-study' methodology; and (b) further identify the differential role, if any, of four strategic factors on the market value of the parents. Two factors pertain to the degree of relatedness between the product/market segments of the parents and the JV and two other factors pertain to important areas of partner asymmetry, namely differences between parents along the degree of relatedness, and their relative size.

This paper is divided into four sections. The first section develops the theoretical perspectives underlying this study, leading up to the specification of hypotheses. The second section describes the sample and statistical methodology employed in the analysis, while the third section presents the results. The final section develops the discussions and implications.

## THEORETICAL PERSPECTIVES

### Research Question One: Market Valuation of Joint Venture Formations

The starting point for this research is a premise that joint ventures are, on average, value-creating activities for the participating parents and that the announcements of JV formation will have a significant, positive impact on the market value of the parents. This is based on an argument that the potential range of benefits from forming joint ventures outweigh the associated costs, under *ceteris paribus* conditions (Contractor & Lorange, 1988; Harrigan, 1985; Porter & Fuller, 1986).

**Benefits.** The general set of benefits can be classified into four categories: (a) *economies of scale* -- through sharing of distinct activities of the parents under one entity (for instance, in 1986 GTE Corp. and United Telecommunications Inc. formed US Sprint, which combined the GTE-Sprint long-distance telephone company and GTE Telenet, a data transmission network, with United Telecommunications' US Telecom, a long-distance telephone company, and Data Communications Corp. (Uninet), a United Telecommunications public data transmission network); (b) *access to complementary assets* -- through pooling of the complementary assets of the partners such as production and marketing and design and manufacturing (for instance, in 1983 AT&T and Philips formed AT&T/Philips Telecommunications Systems to manufacture and market AT&T's network switching equipment, through which AT&T's technology was linked to Philips' marketing skills); (c) *cost or risk sharing* -- through joint projects in areas characterized by extremely high development costs coupled with uncertain demand and/or short product- or technology-life cycle (for instance, in 1982 Knight-Ridder and Tele-Communication Inc. formed TKR Cable Co. to acquire, develop, and operate CATV systems); and (d) *shaping the scope and basis of competition* -- by coopting existing or potential competitors within regulatory constraints (for instance, in 1984 IBM formed Trintex,

a videotex-service venture, with CBS and Sears, Roebuck & Co., which pit IBM against its chief rival AT&T which had a two-year head start in two-way electronic service field).

**Potential Costs.** Joint ventures also involve potential costs to the participating parents that should be recognized. Porter and Fuller (1986) classify them into three categories: (a) *coordination costs* -- these arise given the need for ongoing coordination between the partners that could be difficult under the conditions in which divergent interests between partners may complicate the joint pursuit of a strategy (e.g., Moxon & Geringer, 1985); (b) *erosion of competitive position* -- this may result if an existing competitor is made more formidable through the transfer of proprietary expertise and market access as well as the lowering entry barriers (e.g., Bresser, 1988); (c) *creation of an adverse bargaining position* -- this may occur if one partner is able to capture a disproportionate share of the value created by the joint venture due to the other partner's adverse bargaining position resulting from specialized and irreversible investments.

Following Contractor and Lorange (1988), Harrigan (1985), and Porter and Fuller (1986), the general theoretical position is that the announcements of joint venture formation -- on average -- will have a significant positive effect on the market value of the participating parents.

**Assessment of the Effect of JV Formation.** There are several alternative approaches to the assessment of the effect of JV formation. In Figure 2, we distinguish the alternative approaches along two dimensions: (a) *the time frame* -- *ex-ante* versus *ex-post*; and (b) *the focus*, i.e., the target organization for assessing the effects -- the *parent* firm versus *JV* for positioning prior empirical work in this area. The first type -- termed as **parent-focused, ex-ante** -- seeks to identify the impact of the announcement of JV formation on the value of the participating parents. Examples of empirical studies in this type include McConnell and Nantell (1985)

and Balakrishnan and Koza (1988). In contrast, the fourth type -- termed as **JV-focused, ex-post** -- is characterized by those studies that seek to isolate the specific effects of JVs after the JVs have been in existence for some time. Examples of studies include Harrigan (1988), Killing (1982, 1983), and Kogut (1988b). To our knowledge there are no empirical studies in the other two categories shown in Figure 2.

(Insert Figure 2 about here)

This study belongs to the parent-focused, ex-ante type (Category A). The adoption of this perspective offers an efficient basis for the assessment of the specific value of JV formations in the sense that an event-study methodology popularly adopted in studies of mergers and acquisitions (Jensen & Ruback, 1983) and other areas of strategic management where distinct strategic events can be isolated, such as CEO succession (Beatty & Zajac, 1987; Friedman & Singh, 1989; Lubatkin, Chung, Rogers, & Owers, 1989) or JV formation (McConnell & Nantell, 1985). The underlying logic is that this perspective processes the information necessary to arrive at the impact of a significant 'event' on a firm's market value (Fama, 1970). Specifically, the movement of returns on a firm's stock around the time of the event is a strong reflection of the impact of the event; if the event is considered to be marginal to the firm's strategy and performance, there would be no appreciable change in the market value of the firm (see Lubatkin & Shrieves, 1986 for a succinct discussion regarding the role of this approach for assessing strategic management events).

Thus, we develop the following hypothesis:
   **H1: The abnormal returns associated with the event of joint venture are expected to be positive for the participating parents.**


**Benchmarking the Impact of JVs on Market Value of Parents With Other Forms of Cooperative Arrangements.** As an additional exploratory calibration, JVs are further compared with other forms of cooperative arrangements in terms of the

extent to which they generated higher values (abnormal returns) for the firms. Specifically, we considered other forms such as: licensing, technology exchange, marketing, and supply agreements. Although not exhaustive, this classification is mutually exclusive and covers a significant realm of cooperative arrangements. The logic for considering the other arrangements is as follows: As discussed by Porter and Fuller (1986), Contractor and Lorange (1988), Contractor (1985), Harrigan (1985), Telesio (1977), and Wilson (1975), strategic motivations and potential costs behind these forms of cooperative arrangements are likely to be similar to those associated with joint ventures. Given such parallels between joint ventures and these other forms, the premise that these other forms are synergistic for the participating firms appears to be reasonable. This comparison is worthwhile from a strategic management perspective because each form could be considered as an alternative to a joint venture. Thus, an additional aspect of H1 involves the exploratory comparison of the value created by JV with the values created by other forms of cooperative arrangements.

H1 as stated above is intended to serve as a replication of McConnell and Nantell's (1985) study with differing time-frame and minimum overlap in joint venture industries and sample. This is offered in the spirit of constructive replication which is important for cumulative theory building, where no one single empirical test can be considered as adequate support for a theoretical proposition. However, this paper goes beyond their study in two ways: (a) a comparison of values with other forms of cooperative arrangements; and (b) exploration of the impact of differential strategies on the market values of the participating firms discussed in the next research question.

**Research Question Two: The Market Impacts of Differential JV Strategies**

If research question one is supported, then it is particularly important to explore conditions under which some partner firms derive more value from joint

ventures than other partner firms. This is critical since a general observation that the formation of JVs has a positive value, by itself, is of limited use for both theory and practice. As strategic management researchers, it is necessary to identify differential strategies that lead to differential value under specific contingent effects. As in question one, the focus is on the parent and not on the JV, and is consistent with our reliance on the event-study methodology.

This research question can be used as an initial step in formally evaluating Harrigan's (1988) finding that "partners' and sponsor-venture relationship traits are less important in determining which cooperative strategy to embrace than industry traits are" (p.225). Based on this finding, she asserted that "venturing firms should worry *less* about their partners' traits and *more* about the competitive needs that their ventures are intended to address when their managers use strategic alliances" (p. 225). Based on a review of the extant literature on joint ventures, we considered four strategic choices pertaining to joint-venture formation for assessing their differential effects, if any, on the market value of the parents. The first two choices pertain to the role of 'relatedness' as a source of value creation, while the other two choices are concerned with important dimensions of partner asymmetry. These four are discussed below individually with a view to developing specific hypotheses.

**Hypotheses on Relatedness as a Source of Value Creation**

It has been observed in studies of diversification and mergers that combinations of resources in a related manner create more value than in an unrelated manner -- popularly termed as the 'relatedness hypothesis' (e.g., Rumelt, 1974; Bettis & Hall, 1982; Singh & Montgomery, 1987). The theoretical underpinning is that when a company operates in a set of related businesses, it is possible for the firm to exploit its 'core factor,' leading to economies of scale and scope, efficiency in resource allocation, and opportunity to utilize particular technical and managerial skills (Rumelt, 1982), which has been empirically corroborated. We extend the

theoretical arguments to the realm of JV formations to hypothesize that related joint ventures are expected to outperform unrelated ones. Specifically, we consider the role of JVs in influencing product--market segments and the degree of relatedness of the JV with the focal parent's portfolio.

**Role of Joint Ventures in Influencing Product/Market Segments.** In conceptualizing the role of JV in influencing the product--market activity, we adopt the framework of Salter and Weinhold's (1979) adaptation of Ansoff's (1965) classical strategy framework. Specifically, the role of JV can be conceptualized along two dimensions: (a) product expansion -- adding new products; and (b) market expansion -- serving new customers. Figure 3 depicts the four possible roles. In the **identical** category, parents and joint ventures are in the same product/market segments; in the **related-supplementary** category, the proposed joint ventures provide parents with access to new customers and markets rather than new products; in the **related-complementary** category, they provide parents with new products rather than access to new markets; and in the **unrelated** category, parents and joint ventures are in different product/market segments. Figure 3(b) presents illustrative examples of the role classification using this framework.

(Insert Figure 3 About Here)

Each role represents different types of resource combinations, and, therefore, different opportunities for creating market value (Shelton, 1988). Based on extant theories in industrial organization economics in general and strategic management in particular, we argue that opportunities for value creation are maximized when the JVs are closely related to their parents in terms of product and/or market scope. Thus, this theoretical perspective leads to the hypothesis that joint ventures in the identical category (similar products and markets) will create a higher value than those JVs belonging to the related-supplementary, related-complementary and unrelated categories. This is further supported by the market-power argument that

monopoly gains are most likely when parents' and joint ventures' product/market segments overlap (Duncan,1982, p. 340).

In contrast, when JVs play no significant role in expanding either products or markets, they are expected to contribute minimally to the market value of the parents. Thus, while the identical type can be argued to create the best opportunities and the unrelated the worst opportunities for increasing market value, the extent of prior theory in distinguishing between the roles of related-supplementary and the related-complementary forms of joint ventures is rather weak. This is primarily because, on an *a priori* basis, neither market expansion nor product expansion can be argued to be universally superior.

The hypothesis for differential value based on the patterns of relatedness outlined in Figure 3 is formally stated as:

> H2: Parents forming joint ventures in the *identical* category will, on average, report the highest abnormal returns, while parents forming joint ventures in the *unrelated* category will, on average, report the lowest abnormal returns.

**Degree of Relatedness with the Focal Parent's Portfolio.** An extension of the theoretical perspective of relatedness also allows us to examine the division of benefits from the joint-venture formation between parents *for the same joint venture.* Suppose that parent 1 and parent 2 equally own a joint venture and that, while all of parent 1's product/market segments are related to the specific area of the JV operation, only a small fraction of parent 2 business operation is related to the JV's business. Then, it can be argued that the particular JV provide parent 1 with more opportunities than for parent 2. Specifically, as argued for H2, the formation of JV provides parent 1 to exploit economies of scale and scope in various areas of operations more than what the JV offers the other parent. Hence, the same JV is expected to influence the value of parent 1 greater than parent 2. This hypothesis

addresses an important issue pertaining to the differential role of a particular JV to its different parents.

Thus, the formal hypothesis is as follows:
> **H3: The parent with the higher sales portion of businesses related to the joint venture's business in an equally-owned joint venture will, on average, report a higher abnormal return than the parent with a lower sales portion.**

## Hypotheses on Partner Asymmetries

Two kinds of partner asymmetries are analyzed in terms of the degree to which each influences the effectiveness of joint ventures: (a) related versus unrelated partner; and (b) large versus small partner. The rationale is that the analysis of the impacts of these partner asymmetries on the differential market value of the participating parents will provide insights into the appropriate strategies for the selection of partner(s).

**Related versus Unrelated Partner.** The first type of partner asymmetry is concerned with the degree to which the partners are operating in related businesses. As Harrigan (1988) suggests, significant asymmetries between the partners are expected to be harmful to venturing performance because their heterogeneity exacerbates differences in how the partners value their joint venture's activities. Implicit in this argument is the premise that the more distant the partners are in relation to each other, the less strategic and organizational compatibility they have. Having a related partner may enhance joint-venture effectiveness by facilitating strategic as well as operational coordinations in the joint venture.

The following hypothesis is, therefore, developed:
> **H4: Firms with related joint-venture partners will, on average, report higher abnormal returns than those with unrelated partners.**

However, there is a competing argument grounded in the transaction cost framework. Balakrishnan and Koza (1988) argued that joint ventures are superior to markets and hierarchies when the costs of valuing complementary assets are

nontrivial. They hypothesized that investors will respond less favorably to joint ventures between related partners that are well informed about each other's business. Their interpretation was that a joint venture is not a value-maximizing mechanism under conditions in which the costs of valuing and acquiring complementary assets are trivial. The parents' management should have preferred acquisition, and the failure to do so is a signal to the market about either the inefficiency of the management or the managerial motives behind the decision. Despite the differences in underlying theoretical perspectives between the present study and Balakrishnan and Koza (1988), it may be of some value to compare the two results.

**Large versus Small Partner.** An important variable in the choice of joint venture formation pertains to the relative size of the partner. As reported in Hlavacek, Dovey, and Biondo (1977) and Roberts (1980), the trend toward joint ventures in which large and small firms join to create a new entry into the marketplace has been increasing. While it is common to see the small partner firm providing the technology with the large partner contributing capital and marketing capability, other arrangements of pooling complementary resources also exist.

There is a body of literature on the 'relative size hypothesis' in the mergers and acquisitions literature that provides evidence that the abnormal return of the acquired firm (small firm) in a merger is larger than that of the acquiring firm (large firm), but the gains in dollar value are approximately equal (Asquith, Bruner, & Mullins, 1983; Bradley, Desai, & Kim, 1983). Asquith, Bruner, and Mullins (1983) argue that the failure of most studies of mergers to detect any effect of the merger on the acquiring firms is due to the fact that in most cases, the acquiring firms are significantly larger than the acquired firms. Thus, if the dollar value of gain in a merger is divided evenly between the acquiring and acquired firms and if the acquiring firm's market value is 10 times that of the acquired firm, then a 10 percent

abnormal return to the shareholders of the acquired firm will translate into an 1 percent abnormal return to those of the acquiring firm (McConnell & Nantell, 1985).

We argue that it is not only important but also appropriate to determine the validity of the 'relative size hypothesis' in joint venture formations. Obviously, the way in which benefits from the formation of the joint venture are divided between the smaller and larger partners provides some insight into the importance of the relative size in the selection of partner(s). We frame our hypothesis on the relative size hypothesis in the area of mergers. Thus:

> **H5: The abnormal return of the smaller partner in an equally-owned joint venture will be, on average, higher than that of the larger partner, but the dollar value of their gains will be approximately equal.**

## RESEARCH METHOD

### Sample Frame

This study is designed within a focused sample frame. The specific sector considered for the study is broadly characterized as the 'information technology (IT) sector,' which is growing in importance over the last decade. For the purpose of this research, a broad definition of the I.T. sector has been adopted to include the areas of the economy that directly and/or indirectly deal with products and components -- such as electrical and electronics machinery, equipment, and supplies, measuring instruments and optical goods, communication, computer and data processing as well as electronic imaging and video.

The sample includes joint ventures reported in the *Wall Street Journal* and referenced in the *Wall Street Journal Index* over the period between 1972 and 1986. In order to be included in the final sample, the common stock returns for at least one of the parents had to be available on the daily returns file of the *Center for Research in Security Prices* (CRSP) over a period beginning 270 days prior to the announcement of the joint venture. The sample was screened to eliminate parents that made announcements regarding earnings, dividends, mergers, or other

important firm-specific information during the arrangement announcement period (which is defined in the Analytical Methodology section below).

This search and screening procedure yielded a sample of 239 firms involved in 175 joint ventures. Table 1 indicates the number of joint ventures and the participating parents by joint venture industry.

(Insert Table 1 about here)

## Analytical Methodology

**Model.** The primary analytical methodology used to test hypotheses is the standard residual analysis technique based on the market model. The procedure described here follows the methods used by Dodd, Dopuch, and Hollhausen (1984) and Brown and Warner (1985). The day on which the *initial* article describing a joint venture appeared in the *Wall Street Journal* was numbered event day t=0. The trading days prior to that day were numbered event days t=-1, t=-2, and subsequent trading days numbered event days t=+1, t=+2, and so on.

Daily market model parameters were estimated for each firm using 200-day returns beginning with event day t=-270 and ending with event day t=-71.

$$R_{it} = a_i + b_i R_{mt} + u_{it} \quad t=\text{-270 to } t=\text{-71}$$

where
$R_{it}$ = common stock return of firm i on day t;
$R_{mt}$ = rate of return on the CRSP value-weighted index on day t;
$a_i$ and $b_i$ = ordinary least squares estimates of market model parameters;
$u_{it}$ = market model errors.

A firm was included only if it had a minimum of 100 days of returns. The impact of the announcement of the security's price was measured over the two-day trading period consisting of t=-1 and t=0. Henceforth, this two-day trading interval is referred to as the announcement period. The analytical methodology we follow is the same as the conventional approach in prior studies adopting the event-study model. In the interest of space, we have not provided details that are already

available in sources such as: Brown and Warner (1985), Lubatkin et. al (1989), McConnell and Nantell (1985) and Friedman and Singh (1989).

Statistical Tests. In addition to the conventional t-test for the significance of the abnormal returns, two other statistics were also employed to explore the impact of possible outliers. The first is the binomial z-statistic constructed based on the efficient-market assumption that the sign of the parent's abnormal return would follow a binomial distribution, with the probability of its taking a positive sign being 0.5 (Brown & Warner, 1985). So, if the announcements of joint ventures have no significant effect on the returns to the shareholders of the parents, then the parents' abnormal returns during the announcement period would be normally distributed. That is, one-half of the parents would have positive abnormal returns and the other half, negative abnormal returns. The other test used was the median signed rank (Wilcoxon) test, which takes into account the magnitude as well as the sign of each parent's abnormal return (Hollander & Wolfe, 1973).

Selection of Relevant Time Frame. One of the most important issues in using an event-study is to select the relevant time frame -- daily or monthly returns data with important tradeoffs between the two. Lubatkin and Shrieves (1986) point out weaknesses associated with using each time frame from the standpoint of strategic management research. They argue that using daily returns data may be inappropriate when the purpose is to assess the full impact of a strategic event. First, strategic events cannot be dated precisely because they represent the outcome of a series of related events. Second, the short time frame may not capture the full series of strategic event-related returns. They also discuss two problems of using monthly returns data. First, the long time frame (usually five years) required for their use increases the likelihood that extraneous events will be captured. Second, it is commonly recommended that in the case of using monthly returns, 'clean data-screening criterion' be applied, which excludes firms that have participated in the

same type of event during some specific period (typically three years before and after the event) around the date of the event under consideration. Clean data may result in a biased sample by systematically excluding firms which were active in participating in the event being studied. Another problem of the clean data criterion is that it reduces the sample size.

Given the above considerations, the use of daily returns data may be justified in the research of joint ventures. First, as McConnell and Nantell (1985) reported 0.73% of two-day average abnormal return, the magnitude of abnormal returns associated with joint ventures would be significantly small compared to that of abnormal returns associated with events such as mergers. Using monthly data possibly causes the effect of extraneous events to outweigh that of joint ventures. Although the use of daily data *may understate* abnormal returns associated with joint-venture formation, it, however, makes it possible to capture at least a *lower bound* estimate of created value that can be attributed directly to joint-venture formation. Second, because in the information technology sector, the major firms tend to form multiple joint ventures, applying the clean data criterion, which eliminates these firms from the sample, will significantly reduce the sample size and more importantly introduce bias into the sample. Third, it is also important to note that this daily-time frame has been adopted by studies of some areas in strategic management in which a corporate action is the outcome of a series of related events or tactics, each of which increases or decreases the probability of the final outcome. Key themes include: mergers and acquisitions (e.g., Chatterjee, 1986; Shelton, 1988; Singh & Montgomery, 1987) and CEO succession (e.g., Beatty & Zajac, 1987; Friedman & Singh, 1989; Lubatkin, Chung, Rogers, & Owers, 1989).

# RESULTS

## Support for Research Question One

Estimated abnormal returns associated with joint ventures and the test statistics are presented in Table 2. The two-day announcement-period average abnormal return is 0.87 percent and all three tests indicate that the null hypothesis of no synergistic effect can be rejected at the 0.01 level of significance.

Another way to assess the impact of joint venture announcements on shareholder wealth is to convert the average abnormal return to a dollar value. Thus, the two-day announcement-period abnormal return for each firm was multiplied by the security's total market value as of event day t=-3. The cross-sectional average of the dollar values is $12.6 million. It is useful to note that the unexpected average change in wealth from joint ventures is greater than the total market value of the equity of a significant fraction of all companies listed on the NYSE and ASE. It must be emphasized that this estimate does not reflect the total value created by joint venture formation, but is more a *lower-bound* estimate of the value of joint-venture formation.

**Benchmarking the Impact With Other Forms of Cooperative Arrangements.** As noted at the outset, we are interested in benchmarking the magnitude of abnormal returns for JV formation with other cooperative arrangements. The same search-and-screening procedure described in the Methods section for joint ventures yielded a sample of 102 firms in 76 technology exchange agreements, 60 firms in 45 licensing arrangements, 91 firms in 77 marketing agreements, and 50 firms in 38 supply agreements. Estimated average abnormal returns associated with these four types of cooperative arrangements are presented in Table 2. The average abnormal return during the announcement period for technology exchange agreements is 0.8 percent, which is significant at the 0.01 level of significance. This finding confirms the importance of technology access as a motive for cooperation in this technology-

intensive sector. However, the binomial z-statistic and the Wilcoxon test do not reject the null hypothesis of no synergistic effects. This result indicates that the significant average abnormal return may have been due to a few outlier observations. On the other hand, all three tests indicate that licensing, marketing, and supply agreements do not seem to create any values for the participating firms. The cross-sectional averages of the dollar values for technology exchange, licensing, marketing, and supply agreements are $24.6 million, $37.9 million, $(-)24.7 million, and $(-)24.5 million, respectively. Since significant dollar gains for licensing agreements resulted from a few outliers, assessing the effectiveness of licensing agreements based on these dollar values is misleading.

(Insert Table 2 about here)

The comparison made in Table 2 suggests that joint ventures have, on average, more impact on the market value for the participating firms than other kinds of cooperative arrangements. However, it should be noted that since the comparisons were made in an exploratory fashion to calibrate JV effectiveness, the finding should *not* be taken as confirmatory. Rather, this exploratory finding could serve as a point of departure for future research to develop more focused hypotheses on the the relative roles of the different cooperative mechanisms to create value for the participating parents.

Support for Research Question Two

**H2: Roles of Joint Ventures.** The two dimensions 'adding new products' and 'serving new customers' are the basis of the classificatory scheme for the roles of joint ventures as shown in Figure 3. The key issue in the product dimension is distinguishing truly new products from those similar to parents' already existing products. This distinction was made on the basis of whether parents or divisions involved in joint-venture formation already had operations in the businesses with the same SIC codes at the four-digit level as the businesses of their newly-created

joint ventures. The market dimension was operationalized according to whether joint ventures allowed their parent firms to expand into new geographic markets of the parents' existing businesses or to serve customers in new industries (businesses). Based on these guidelines, the full sample was classified into four groupings as shown in Table 3: Identical (91 parents), Related-Supplementary (54 parents), Related-Complementary (73 parents), and Unrelated (17 parents) Because of inadequate information, four parents were excluded.

All three tests allow us to reject the null hypothesis of no synergistic effect at the 0.01 level of significance for the Identical sample. For the Related-Complementary sample, the t-test and the Wilcoxon test permit the rejection of the null hypothesis at the 0.05 and 0.10 levels of significance, respectively. However, the null hypothesis cannot be rejected for the Related-Supplementary and Unrelated samples according to any of the three tests. Thus, the results indicate the following: (1) the formation of joint ventures, on average, has significant positive effects on the market values for the parent firms if the joint ventures strengthen some existing product/market segments or market new products in the existing markets; whereas (2) the formation of joint ventures, on average, create no appreciable increase in the market value for the parents it the joint ventures either build new customer bases served by already existing products or enter into new, unrelated product -- market segments.

The findings basically support H2. Inconsistent with the underlying theoretical argument is, however, the finding that the Related-Supplementary joint ventures, on average, create no appreciable increase in market values. This is clearly contradictory with Shelton's (1988) finding that the combination of assets in a related-supplementary fashion creates the greatest values with the least variance. A possible explanation is that in the information technology sector, especially in the telecommunications equipment and computer industries, tailoring products to the

needs of customers in new geographic markets is often necessary and expensive so that such costs may outweigh benefits such as economies of scale[1].

(Insert Table 3 about here)

It is worthwhile to juxtapose the findings associated with joint ventures with those associated with technology exchange and marketing agreements. Because of rapid technological changes and consequent competitive pressure, firms in the sector often form the Identical-type joint ventures to acquire complementary technologies, which are critical for strengthening their existing product/market scope, as described for the CDC-NCR venture. It is readily apparent that technology exchange agreements are necessitated by the need for technology access. These observations allow an industry-specific or sector-specific conjecture that access to complementary technologies contributes to value creation, as shown by the significantly positive abnormal returns for the Identical-type joint ventures and technology agreements.

In contrast with technology access, market access, which is another important motive for forming cooperative arrangements, does not appear to create values for the participants, as indicated in the findings associated with the Related-Supplementary joint ventures and marketing agreements. These findings are at odds with their strategic significance and popularity. New marketing and distribution channels are essential because of the creation of new products and intensifying globalization in the sector.

These conjectures are worthwhile to make, but far from conclusive. However, they argue for a more careful analysis of various types of cooperative arrangements

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[1] For instance, a *Financial Times* article (June 10, 1986) reported that Ericsson invested $100 million to modify one of its switching systems for the U.S. market; ITT invested $200 million (20% of its worldwide R&D) to adapt a central office switch to the *Lata Switching Generic Requirements* of the U.S. market.

to yield insights into the fundamental factors in the different markets that lead to increased value.

**H3: Degree of Relatedness with the Focal Parent's Portfolio.** A subsample in which both or all parents were included in the full sample was identified. For each JV included in the sample, the parent with the higher sales portion of businesses related to the JV business was categorized into the 'parent-with-opportunity' sample, while the other parent with the lower sales proportion was categorized into the 'parent-without-opportunity' sample. In the case of a joint venture involving more than two parents, parents which were more or less similar in the sales portion of related businesses were classified into the same sample. Any two businesses were classified as related if they shared at least one of the following characteristics: (a) similar products and/or markets; (b) similar production technologies; and (c) similar science-based research. The 'parent-with-opportunity' sample contained 58 parents and the 'parent-without-opportunity' sample consisted of 61 parents[2].

Table 4 shows that none of the tests rejects the null hypothesis of no synergistic effect for the 'parent-without-opportunity' sample, whereas the t-test and the Wilcoxon test reject the null hypothesis at the 0.01 and 0.1 levels of significance for the 'parent-with-opportunity' sample. It should be noted that the relatively weak support provided by the Wilcoxon test and the lack of support from the Binomial z-test stems from the peculiar distribution of the data as shown by the corresponding significance levels associated with the binomial z-statistic and the Wilcoxon test for the full paired sample. Nevertheless, the results support the hypothesis that the

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[2] One of the reviewers pointed out that the relative share of the two parents in the JV is an important issue in understanding the differential opportunities. We agree with this observation entirely, and indeed in the 80% of the cases where the data were available, the split was 50-50, lending confidence to the assumption regarding equal share between the two parents.

parent with more businesses related to the joint venture's business reaps more benefits from the joint venture than the other parent(s).

(Insert Table 4 about here)

**H4: Related versus Unrelated Partner.** Parents were categorized into the 'related-partner' sample if they had partners which had operations in related businesses. Thus, the 'unrelated-partner' sample consisted of parents with partners which had operations in unrelated businesses. Relatedness was operationalized as in the test of H3. In the case of joint ventures involving multiple partners, parents with at least one related partner were categorized into the 'related-partner' sample. Because of inadequate information, three parents were excluded. The 'related-partner' sample consisted of 183 parents, while the 'unrelated-partner' sample had 53 parents.

As shown in Table 5, all three tests reject the null hypothesis of no synergistic effect at the 0.01 level of significance for the 'related-partner' sample, whereas no test rejects the null hypothesis for the 'unrelated-partner' sample. This finding provides strong support for H4, as it appears that joint ventures involving related partners are more effective for the parents than otherwise. This finding is at odds with Balakrishnan and Koza's (1988) competing hypothesis, and thus is an important area for further inquiry.

(Insert Table 5 about here)

**H5: Large versus Small Partner.** A subsample of joint ventures in which both or all parent firms were included in the full sample was identified. For each joint venture included in the subsample, the parent with the larger market value of its common stock three trading days before the announcement of the JV formation was categorized into the 'large-partner' sample, while the other parent with the smaller market value was categorized into the 'smaller-partner' sample. In the case of a joint venture involving more than two parents, parents which were more or less similar

in size were categorized into the same sample. The 'large-partner' sample contained 59 parents and the 'small-partner' sample contained 60 parents. The remaining 120 parents in the full sample were placed into the 'all-other' sample. This third sample contained parents for which the partner's common stock was not listed on either the NYSE or ASE during the period of the study.

Table 6 shows that the shareholders of the smaller partner earned significantly positive abnormal return, while those of the larger partner earned insignificant abnormal return. This result is *not* consistent with McConnell and Nantell's (1985) finding that shareholders appear to gain when firms enter into joint ventures regardless of the relative size of their partner. Moreover, the result that smaller partners, on average, earn higher gains in dollar value ($19.2 million) than larger partners ($2.3 million) is not consistent with the 'relative size hypothesis' of the merger studies. It may be argued that having a larger firm as a joint venture partner will be more beneficial.

For a small firm, having a large firm as the joint-venture partner benefits the small firm in various ways in addition to the contribution the large partner makes towards the joint venture. One of the positive effects is the spillover of the large partner's reputation to the small firm. The fact that the large firm endorses the small firm as a partner may be a valuable asset. On the other hand, the asymmetry in size is likely to lead the smaller partner into an adverse bargaining position. In fact, the overall control over major decisions in the joint venture may be at the large partner's mercy.

<center>(Insert Table 6 about here)</center>

<center>DISCUSSIONS</center>

Based on the strategic behavior perspective, this paper attempted to (a) assess the impact of joint venture formation on the market value for the participating parents using an event-study methodology, and (b) further identify the key strategic

choices influencing the market values of the parents. Table 7 provides the results of testing the set of five hypotheses.

(Insert Table 7 about here)

**Impact of Joint Venture Formations on the Market Value**

The study began with a premise that the impact of forming joint ventures will have a significant, positive effect on the market value of the participating firms using an event-study methodology. This is based on prior work in the area of mergers and acquisitions as well as one prior study in the area of joint ventures (McConnell & Nantell, 1985). The results of our study is consistent with prior studies and suggest that the announcement of joint venture formations have, on average, a positive and significant effect on the market value of the participating parents (H1), leading to the conclusion that JVs are value-creating intercorporate transactions for the shareholders of the parents. Thus, we provide an independent corroboration to an important empirical finding in a different dataset and a more recent time-period. Further, if we assume that the calibration of abnormal returns due to a significant 'strategic event' is a good predictor of the ultimate benefit or effectiveness of the particular strategy, then we can make a reasonable case that the formation of joint ventures in the I.T. sector is an effective generic strategy.

Moreover, an exploratory calibration of joint-venture effectiveness using other types of cooperative arrangements -- technology exchange, licensing, marketing, supply agreements -- supported the conclusion that the impact on value creation from JVs is higher than the other forms of cooperative arrangements. Although not viewed within a confirmatory, hypothesis-testing mode, this comparison is meaningful from the strategic management standpoint given that each type of cooperative arrangement could be considered as an alternative to the formation of a joint venture. Based on this result, we urge that a more systematic theoretical development is necessary to distinguish among the differential roles of cooperative

arrangements within a contingency framework. Indeed, an important area of inquiry pertains to the relative roles and benefits of the different cooperative arrangements under distinct sets of contingencies.

## Differential Values of Joint Venture Strategies

A general empirical finding that the formation of joint ventures leads to increase in the market value of the parents is of limited use for both theory and practice. Hence, we explored the differential sources of value from different types of joint ventures. Specifically, we explored the role of four strategic factors in modifying the expected value from forming joint ventures in the I.T. sector. This study demonstrated that the magnitude and significance of value creation from joint ventures varied across different types of joint ventures and different types of partners (H2 through H5). While Harrigan (1985, 1988) provided a cross-sectional description and results across a variety of sectors, this study focuses exclusively on one sector, thereby helping to mitigate industry effects in isolating the differential effects of joint-venture strategies. It is particularly important to note that while Harrigan's conclusions have provided more insights into industry-level traits relative to joint-venture strategies, this study -- within one relatively narrow sector --lends credence to the *importance of joint-venture strategies*. Specifically, it was found that the parents forming JVs in the identical and related-complementary categories (Figure 3) reported higher gains in abnormal returns than those parents forming other types of JVs; the parents with a higher proportion of business operations with the JV operations earned higher abnormal returns than other parents; the parents with related partners received a greater increase in the value than those with unrelated partners; and finally the smaller partner benefitted more from JV formation than the larger partner.

## Implications

The results of this study has several implications for the identification of the factors that lead to the creation of value from JV activities, which are increasing in importance in recent years. The first implication is that the results supported the 'relatedness hypothesis' -- one of the major issues in studies of diversification and mergers -- for joint ventures. It appears, therefore, that 'relatedness' is a major source of value creation from intercorporate combinations of resources in general, and argues for greater attention to *relatedness* in the formation of corporate strategies. Thus, it may be useful to develop a more comprehensive treatment of the role of relatedness as a central concept in the larger set of corporate strategy choices available (including those involving cooperative arrangements) to a firm.

The second implication warranting further investigation is related to the peculiar characteristics of the industry sector studied here. The implication from the study is that significant abnormal returns associated with the Identical-type joint ventures and technology exchange agreements lend support to a conclusion that technology access is an important determinant of value creation. In contrast, the insignificant results for the Related Supplementary joint ventures and marketing agreements seem to suggest market access is more or less insignificant as a value creator, despite its importance as a primary, generic motive for cooperation. It is difficult to assess the generalizability of this set of results as we know from related research that the exploitation of information technological capabilities is an important source of competitive advantage in the marketplace. Specifically, given the ever-shortening life-cycle of the technologies as well as products built using the technologies and the increasing development costs and risks, our results lend credence to the importance of joint ventures as a strategy for sourcing technologies that are necessary for sustaining the status quo or diversifying into other related areas. To some extent, this argument is in agreement with the knowledge-

acquisition aspect of joint ventures (Berg & Friedman, 1980). However, it may be too premature to conclude the relative importance of product-extension versus market-extension as other settings could conceivably show centrality of JVs for accessing new markets. Thus, the implication is that sector-specific theoretical arguments need to be advanced for hypotheses in future research studies.

A related research implication pertains to the role of the market-power rationale for JV formation. To the extent that technology access is a major determinant of value creation from the Identical-type joint ventures, one could argue that the relative explanatory power of the market-power rationale decreases. Thus, it is critical to develop a contingency framework that recognizes the industry characteristics as well as the motive of the parents in the development of a mid-range theory on the role of joint ventures. Accordingly, we develop some specific areas of extensions below.

Extensions

*Need for a Contingent Research Framework.* Although joint ventures are becoming an important phenomenon of corporate strategy in modern corporations, the extent of research attention is sporadic and diffused along different disciplinary perspectives. This study adopted a multi-disciplinary focus to demonstrate the differential values of different types of JV strategies to complement Harrigan's study on the importance of industry-level characteristics. A necessary step, now, is to develop a contingent research framework that recognizes the following: (a) the *industry and market structure factors* that delineate the external context for forming joint ventures; (b) the *strategic (i.e., firm-level) factors* that capture the specific goals for pursuing joint ventures as well as other forms of cooperative arrangements; (c) *the level of analysis* (parent versus JV); and (d) the *timing of assessing the value of JV* (*ex-ante* versus *ex-post*). Such a framework could provide a common ground for synthesizing the results as well as providing a common basis to cumulatively build

a theoretical and empirical research tradition on the role and effectiveness of joint ventures.

*Alternate Approaches to Assessing JV Effectiveness.* This study adopted an *ex-ante* perspective and chose an appropriate measurement scheme for assessing effectiveness. It relies on the collective assessment and evaluations of an important strategic event by the stock market based on its ability to process the critical information regarding the value of JV to the parent. This is consistent with the position offered by Lubatkin and Shrieves (1986) towards recognizing the role of market-based assessments of corporate performance.

Nevertheless, given that the assessment of the value of JV is a complex issue, a useful approach could be to adopt Cameron and Whetten's (1983) classification of organizational effectiveness measurement into: *goal-independent* versus *goal-centered* perspectives for assessing JV effectiveness. In the first scheme, the strategic actions are evaluated against a common reference criterion, while in the second case, the specific goals are more explicitly recognized. Thus, in this study, research question one adopted a general criterion of market value for the general strategic act of forming joint ventures, while in the second research question, we recognized the differential strategic goals in forming the joint ventures. As Cameron and Whetten argue, these two perspectives are complementary, which was highlighted in this study. However, a more systematic adoption of a goal-centered perspective requires the use of managerial assessments of the role played by the JV in the overall corporate strategy and the consequent link to corporate performance (which was not possible in this study). Harrigan's approach to obtain managerial assessments at the JV level (refer Figure 2) could be logically extended at the level of the parent to reflect the implementation and process issues in realizing value from joint ventures. This is because this study assumed the valuation of JV formation from the perspective of the stock-market, and did not have additional bases of

corroboration of this measure. A useful line of extension would be to develop a comprehensive scheme of assessing JV effectiveness -- especially incorporating *ex-ante* and *ex-post* perspectives --  that could be systematically related to the contingency research framework discussed above to examine the range of interesting theoretical questions in this area.

## CONCLUSION

In the strategic management literature, joint ventures have emerged as a critical corporate strategy issue. This study attempted to contribute to the research stream with a focused analysis of the value of joint-venture strategies in one sector of the economy -- information technology. The results indicate that joint ventures are value-creating activities for the participating parents (research question one) and that different strategies for joint ventures yield differential results (research question two), thus arguing for a contingent theory of joint-venture formation strategies. Specifically, the exploitation of technological capabilities for developing related strategies emerged as value-creating strategies attesting to the criticality and pervasive impact of information technologies in modern organizations.

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**Table 1**
**Number of Joint Ventures and Parents by Joint Venture Industry**

| Joint Venture Industry | Joint Ventures | Parents |
|---|---|---|
| **Manufacturing Sector** | | |
| Electronic Components | 19 | 20 |
| Electronic Equipment | 8 | 8 |
| Precision Controls | 11 | 11 |
| Computer & Peripherals | 31 | 42 |
| Tape & Disc | 6 | 8 |
| Photo & Office Equip. | 7 | 10 |
| Comm. Equipment | 20 | 23 |
| Subtotal | 102 | 122 |
| **Nonmanufacturing Sector** | | |
| Motion Pictures | 15 | 23 |
| Cable Services | 21 | 38 |
| Comm. Services | 26 | 41 |
| Software & Data Process | 11 | 15 |
| Subtotal | 73 | 117 |
| Total | 175 | 239 |

### Table 2
### Abnormal Returns and Tests Results of Testing Hypothesis 1 With Additional Data on Benchmarking With Other Types of Cooperative Arrangements

| Type (# of Firms) | Mean AR (t-stat.)[a] | Positive ARs (B-stat.)[b] | Wilcoxon (z-stat.)[c] | $ Gain (Mil.) |
|---|---|---|---|---|
| Joint Ventures (N=239) | 0.87% (5.28)** | 58% (2.52)** | (3.30)** | $ 12.6 |
| Technology Exchange (N=102) | 0.80 (2.66)** | 57 (1.39) | (1.67) | 24.6 |
| Licensing Agreements (N=60) | 0.40 (0.95) | 48 (-0.26) | (-0.33) | 37.9 |
| Marketing Agreements (N=91) | 0.01 (0.04) | 37 (-2.41)** | (-3.21)** | -24.7 |
| Supply Agreements (N=50) | -0.13 (-0.27) | 46 (-0.57) | (-0.18) | -24.5 |

** p < 0.01

a. Student t statistic with 99 degrees of freedom.
b. Binomial sign test statistic with normal approximation.
c. Wilcoxon test statistic with normal approximation.

**Table 3**
**Pattern of Abnormal Returns: Results of Testing the Differential Roles of Joint Ventures for Hypothesis 2**

| Categories<br><br>Test Statistics | Identical<br><br>(N=91) | Related<br>Suppl.<br>(N=54) | Related<br>Comple<br>(N=73) | Unrelated<br><br>(N=17) |
|---|---|---|---|---|
| Average Abnormal Return<br>(t-stat.) | 1.32%<br>(5.20)** | 0.60%<br>(1.50) | 0.68%<br>(2.21)† | 0.37%<br>(0.80) |
| Firms with Positive<br>Abnormal Returns<br>(Binomial z-stat.) | 62.6%<br>(2.41)** | 53.7%<br>(0.54) | 57.5%<br>(1.29) | 52.9%<br>(0.24) |
| Wilcoxon Test<br>(z-stat.) | 3.15 ** | 0.71 | 1.68 @ | 0.29 |

@ $p < 0.10$
* $p < 0.05$
** $p < 0.01$

## Table 4
## Pattern of Abnormal Returns: Results of Testing the Differential Effects of Relatedness with the Focal Parent's Portfolio for Hypothesis 3

| Categories | Full Paired | Parent-with-Opportunity | Parent-without-Opportunity |
|---|---|---|---|
| Test Statistics | Sample (N=119) | Sample (N=58) | Sample (N=61) |
| Two-Day Announcement Period Average Abnormal Return (t-stat.) | 0.75% (3.01)** | 1.40% (3.79)** | 0.14% (0.44) |
| Firms with Positive Abnormal Returns(%) (Binomial z-stat.) | 51.3% (0.28) | 58.6% (1.31) | 44.3% (-0.90) |
| Wilcoxon Test (z-stat.) | 0.36 | 1.71 @ | -1.17 |

@ $p < 0.10$
** $p < 0.01$

**Table 5**
**Pattern of Abnormal Returns: Differential Effects of Related versus Unrelated Partner For Testing Hypothesis 4**

| Categories<br><br>Test Statistics | Related-Partner Sample (N=183) | Unrelated-Partner Sample (N=53) |
|---|---|---|
| Two-Day Announcement Period Average Abnormal Return (t-stat.) | 1.05%<br>(5.27)** | 0.12%<br>(0.36) |
| Firms with Positive Abnormal Returns (%) (Binomial z-stat.) | 61.7%<br>(3.18)** | 45.3%<br>(-0.69) |
| Wilcoxon Test (z-stat.) | 4.16 ** | -0.89 |

** $p < 0.01$

**Table 6:**
**Pattern of Abnormal Returns: Differential Effects of the Results Across -- Large versus Small Partner for Hypothesis 5**

| Categories<br><br>Test Statistics | Full Sample<br><br>(N=239) | Large Partner Sample<br>(N=59) | Small Partner Sample<br>(N=60) | All Other Sample<br>(N=120) |
|---|---|---|---|---|
| Two-Day Announcement Period Average Abnormal Return (t-stat.) | 0.876 (5.28)** | 0.44% (1.38) | 1.13% (3.18)** | 0.94% (3.97)** |
| Firms with Positive Abnormal Returns (%) (Binomial z-stat.) | 58.2% (2.52)** | 39.7% (-1.58) | 62.7% (1.96)* | 64.8% (3.26)** |
| Wilcoxon Test (z-stat.) | 3.30 ** | -1.95 | 2.45 ** | 4.26 ** |
| Gains in Dollar ($ Mil.) | $12.6 | 2.3 | 19.2 | 14.3 |
| Average Market Value ($ Mil.) | $6,073 | 10,010 | 1,429 | 6,489 |
| Average Sales ($ Mil.) | $8,227 | 12,387 | 2,367 | 9,150 |

* $p < 0.05$
** $p < 0.01$

**Table 7:**
**Summary of Hypotheses and Results**

| Statement of Hypothesis | Results |
|---|---|
| H1:Average Effectiveness of Joint Ventures | Joint ventures were value-creating activities for the participating parents. |
| H2: Role of Joint Ventures | Roles of joint ventures were ranked in descending order of value creation as follows: identical, related-complementary, related-supplementary, and unrelated. Parents forming joint ventures in the related-supplementary and unrelated categories reported insignificant abnormal returns. |
| H3:Relatedness with the Focal Parent's Portfolio | The parent with highersales portion of businesses related to joint venture's business reported higher abnormal return than the other parent. |
| H4:Related vs Unrelated Partner | Parents with related partners reported higher abnormal returns than those with unrelated partners. |
| H5:Large vs Small Partner | The smaller partner reported higher abnormal return than the larger one. |

## Figure 1:
## Joint Ventures: Theoretical Perspectives
## and Research Focus

| Focus | Motives for JV Formation | Effectiveness of JV |
|---|---|---|
| **Strategic Behavior** | **Type (A)**<br><br>Explanation of JV formation based on a firm's ability to offer products or services to compete effectiveley | **Type (B)**<br><br>Expectation of higher performance when firms form JVs to maximize their ability to offer products or services to compete effectively |
|  | Empirical Studies:<br>**Berg & Friedman (1977)**<br>**Duncan (1982);** | Empirical Studies:<br>**Harrigan (1988)**<br>**McConnell & Nantell (1985)** |
| **Transaction Cost Perspective** | **Type (C)**<br><br>Explanation of JV formation based on minimization of production and coordination costs of governance | **Type (D)**<br><br>Expectation of higher performance when firms choose the modes that best minimize production and coordination costs |
|  | Empirical Studies:<br>**Shan (1986); Teece, Pisano & Russo (1987)** | **No Empirical Study** |

*Theoretical Perspective* (left axis label)

Key:

| Type A: | Strategic Motives of Parents; |
|---|---|
| Type B: | Effectiveness of JV strategies; |
| Type C: | Efficient Governance Mechanisms; |
| Type D: | Effectiveness of Governance Mechanisms. |

## Figure 2:
## Effectiveness of Joint Ventures:
## Alternate Approaches

| Focus | Parent Firms | Joint Venture |
|---|---|---|
| **Ex-ante**<br><br>*(When JVs are announced)* | **Category (A)**<br><br>Event Study Methodology | **Category (B)**<br><br>Not Directly Possible |
| | **Empirical Studies:**<br>**Balakrishnan and Koza (1988)**<br>**McConnell & Nantell (1985)** | No Empirical Studies |
| **Ex-post**<br><br>*(when JVs are in existence for some time)* | **Category (C)**<br><br>Effectiveness assessed in terms of achievement relative to goals — using managerial assessments | **Category (D)**<br><br>Effectiveness assessed in terms of JV performance (i.e., profits), stability or duration |
| | No Empirical Studies | **Empirical Studies:**<br>**Beamish (1984)**<br>**Harrigan (1988); Kogut (1988b)** |

*(Row label at left: **Perspective**)*

**Key:**

| | |
|---|---|
| **Category A:** | Parent-focused, Ex-ante; |
| **Category B:** | JV-focused, Ex-ante; |
| **Category C:** | Parent-focused, Ex-post; |
| **Category D:** | JV-focused, Ex-post; |

**Figure 3:**
**Role of Joint Ventures in Influencing**
**Product--Market Scope**

## (a) Role Clarification

|  |  |  |
|---|---|---|
| **Product Expansion** | **Identical (I)**<br><br>*Similar Products*<br>*Similar Markets* | **Related-Supplementary (RS)**<br><br>*Similar Products*<br>*New Markets* |
|  | **Related-Complementary (RC)**<br><br>*New Products*<br>*Similar Markets* | **Unrelated (U)**<br><br>*New Products*<br>*New Markets* |

**Market Expansion**

## (b) Illustrative Examples

| Parent 1 | Parent 2 | Joint Venture | Role for Parent 1 | Role for Parent 2 |
|---|---|---|---|---|
| Control Data | NCR | CPI[a] | I | I |
| AT&T | Ricoh | AT&T Ricoh[b] | RS | I |
| IBM | MCA | DiscoVision[c] | RC | I |
| Warner Commun. | Amex | Warner-Amex[d] | I | U |
| 5. NE Telephones | CSX | LightNet[e] | I | U |

a. to develop and make computer peripherals.
b. to make and market AT&T's small telephone systems in Japan.
c. to develop, manufacture, and market videodisc players and
their discs.
d. to construct and operate cable systems.
e. to launch railroad communication services.

# Date Due